

What Is Claimed Is:

1. A page information display method for displaying the electronic information using an information access device comprising a storage unit for storing the electronic information having plural pages of information in a unit 5 of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page information, said operation unit being provided in the substantially same 10 area as said display unit, comprising:

 a page turning operation detecting step of outputting a page turning operation detecting signal when a dragging is made on said operation unit in parallel or anti-parallel to a predefined page turning direction at a current page 15 read from said storage unit that is to be displayed at present;

 a next display page setting step of setting a preceding page or a succeeding page immediately before or after the

current page depending on a direction of said dragging
20 operation to a next display page to be displayed at the
next time, when the page turning operation detecting signal
is output in said page turning operation detecting step;
and

a page turning process step of displaying the next
25 display page set in said next display page setting step
in place of said current page on said display unit.

2. The page information display method according to
Claim 1, wherein said page turning operation detecting step
further comprises a page turning operation judging substep
of judging, as said page turning operation, an operation
5 exceeding a minimum operation length in said page turning
direction within a predefined allowance region in a
direction orthogonal to said page turning direction.

3. The page information display method according to
Claim 1, wherein said page turning operation detecting step
further comprises an operation rate calculating substep
of calculating a page turning rate that is a speed of said

5 page turning operation, and said page turning process step
further comprises a display rate setting substep of setting
a display rate corresponding to the page turning rate
calculated in said operation rate calculating step to
change the display from the current page to the next display
10 page.

4. A page information display device having an
electronic information memory for memorizing the
electronic information having plural pages of information
in a unit of page of predetermined size, a touch panel for
5 displaying the electronic information stored in said
electronic information memory in said unit of page, as well
as inputting an operation to gain access to said page
information, and a display controller for controlling the
display of the page information stored in said electronic
10 information memory on the basis of an operation content
input into said touch panel,
wherein said display controller comprises:

a page turning operation detecting portion for
outputting a page turning operation detecting signal when
15 a dragging is made on said touch panel in parallel or
anti-parallel to a predetermined page turning direction
at a current page read from said electronic information
memory that is to be displayed at present;

a next display page setting portion for setting a
20 preceding page or a succeeding page immediately before or
after the current page depending on a direction of said
dragging operation to a next display page to be displayed
at the next time, when the page turning operation detecting
signal is output by said page turning operation detecting
portion; and
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a page turning process portion for displaying the next
display page set in said next display page setting portion
in place of said current page on said touch panel.

5. A storage medium for storing a page information
display program for displaying the electronic information,
employing an information access device having an

electronic information memory for memorizing the
5 electronic information having plural pages of information
in a unit of page of predetermined size, a touch panel for
displaying the electronic information stored in said
electronic information memory in said unit of page, as well
as inputting an operation to gain access to said page
10 information, and a display controller for controlling the
display of the page information stored in said electronic
information memory on the basis of an operation content
input into said touch panel,

wherein said page information display program
15 comprises, as the commands for operating said display
controller:

a page turning operation detecting command for
outputting a page turning operation detecting signal when
a dragging is made on said touch panel in parallel or
20 anti-parallel to a predetermined page turning direction
at a current page read from said electronic information
memory that is to be displayed at present;

a next display page setting command for setting a preceding page or a succeeding page immediately before or 25 after the current page depending on a direction of said dragging operation to a next display page to be displayed at the next time, when the page turning operation detecting signal is output; and

a page turning process command for displaying the next 30 display page set in accordance with said next display page setting command in place of said current page on said touch panel.

6. A page information display method for displaying the electronic information, employing an information access device comprising a storage unit for storing the electronic information having plural pages of information 5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page

information, said operation unit being provided in the
10 substantially same area as said display unit, comprising:

a page holding operation detecting step of outputting
a page holding operation detecting signal when a
predetermined page holding operation is made at a current
page read from said storage unit that is to be displayed
15 at present;

a holding page number displaying step of displaying
the total number of holding pages in accordance with the
amount of said page holding operation on said display unit,
when the page holding operation is initially detected in
20 said page holding operation detecting step;

a next display page setting step of setting a page
having a page number that is equal to the current page added
or subtracted by the amount of said holding operation to
a next display page to be displayed at the next time, when
25 the page holding operation detecting signal is output in
said page holding operation detecting step; and

a page turning process step of displaying the next display page set in said next display page setting step in place of said current page on said display unit.

7. The page information display method according to Claim 6, wherein said page holding operation detecting step further comprises a pressure holding page number calculating substep of calculating said number of holding 5 pages in accordance with the magnitude of a pressure applied to the substantially same position of said operation unit.

8. The page information display method according to Claim 6, wherein said page holding amount operation detecting step comprises a time holding page number calculating substep of calculating said number of holding 5 pages in accordance with the elapsed time of a depressing operation that continues at the substantially same position of said operation unit.

9. The page information display method according to Claim 7, wherein said holding page number displaying step comprises a substep of displaying a holding display circle

defined with a radius of the size corresponding to said
5 page holding amount on said display unit.

10. The page information display method according to
Claim 7, wherein said holding page number displaying step
comprises a substep of displaying a multiloop consisting
of a number of circles around the same center and
5 corresponding to said page holding amount.

11. The page information display method according to
Claim 7, wherein said holding page number displaying step
comprises a substep of displaying a coated circle defined
with a radius of predetermined size, said circle being
5 coated corresponding to said page holding amount.

12. A page information display device having an
electronic information memory for memorizing the
electronic information having plural pages of information
in a unit of page of predetermined size, a touch panel for
5 displaying the electronic information stored in said
electronic information memory in said unit of page, as well
as inputting an operation to gain access to said page

information, and a display controller for controlling the display of the page information stored in said electronic information memory on the basis of an operation content
10 information memory on the basis of an operation content input into said touch panel,

wherein said display controller comprises:

a page holding operation detecting portion for outputting a page holding operation detecting signal when
15 a predetermined page holding operation is performed at a current page read from said electronic information memory that is to be displayed at present;

a holding page number display unit for displaying the total number of holding pages in accordance with the
20 operation amount of said page holding operation on said display unit, when the page holding operation is initially detected by said page holding operation detecting portion;

a next display page setting portion for setting a page having a page number that is equal to the current page added
25 or subtracted by said amount of holding operation to a next display page to be displayed at the next time, when the

page holding operation detecting signal is output from said page holding operation detecting portion; and

30 a page turning process portion for displaying the next display page set in said next display page setting portion in place of said current page on said touch panel.

13. A storage medium for storing a page information display program for displaying the electronic information, employing an information access device having an electronic information memory for memorizing the 5 electronic information having plural pages of information in a unit of page of predetermined size, a touch panel for displaying the electronic information stored in said electronic information memory in said unit of page, as well as inputting an operation to gain access to said page 10 information, and a display controller for controlling the display of the page information stored in said electronic information memory on the basis of an operation content input into said touch panel,

wherein said page information display program
15 comprises, as the commands for operating said display
controller:

a page holding operation detecting command for
outputting a page holding operation detecting signal when
a predetermined page holding operation is performed at a
20 current page read from said electronic information memory
that is to be displayed at present;

a holding page number display command for displaying
the total number of holding pages in accordance with the
operation amount of said page holding operation on said
25 display unit, when the page holding operation is initially
detected upon said page holding operation detecting
command;

a next display page setting command for setting a page
having a page number that is equal to the current page added
30 or subtracted by said amount of holding operation to a next
display page to be displayed at the next time, when said
page holding operation detecting signal is output in

accordance with said page holding operation detecting command; and

35 a page turning process command for displaying the next display page set in accordance with said next display page setting command in place of said current page on said touch panel.

14. A page information display method for displaying the electronic information, employing an information access device having a storage unit for storing the electronic information having plural pages of information 5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page information, said operation unit being provided in the 10 substantially same area as said display unit, comprising:

a page turning operation detecting step of outputting a page turning operation detecting signal having the number of holding pages and a page turning direction defined, when

a page turning operation for turning one or more pages is

15 performed in said operation unit;

a next display page setting step of setting a preceding page or a succeeding page by said number of holding pages before or after the current page depending on said page turning direction to a next display page to be displayed

20 at the next time, when the page turning operation is

completed in said page turning operation detecting step and the page turning operation detecting signal is output;

and

a page turning process step of displaying the next display page set in said next display page setting step in place of said current page on said display unit,

said page turning process step further comprising:

a next display page reading substep of reading said next display page from said storage unit, when said next

30 display page is set;

a turning state display data creating substep of transforming the current page data making up the current

page that is being displayed on said display unit at every unit display time, as well as creating the turning state 35 display data into which said current page is transformed, when said page turning operation detecting signal is output; and

 a turning state display data overwriting step of overwriting the turning state display data created in said 40 turning state display data creating substep on the next display data read in said next display page reading substep at every unit display time until said turning state display data is exhausted.

15. The page information display method according to Claim 14, wherein said turning state display data creating step further comprises an overwriting display control substep of deleting an area on the start point side in the 5 page turning direction at every said unit time.

16. The page information display method according to Claim 14, wherein said turning state display data creating step further comprises a slide display control substep of

deleting an area on the end point side in the page turning
5 direction at every said unit time as well as shifting the
current page data by the amount of said deleted area in
the page turning direction.

17. The page information display method according to
Claim 14, wherein said turning state display data creating
step further comprises a compression display control
substep of reducing the display length in the page turning
5 direction at every said unit time as well as compressing
said current page data to said reduced display length in
said page turning direction.

18. The page information display method according to
Claim 14, wherein said turning state display data creating
step further comprises:

a three dimensional space defining substep of defining
5 a virtual space in a normal direction of said display unit;
a current page rotating and transforming substep of
rotating and transforming said current page within said

virtual space around the end point side in said page turning direction; and

10 a three dimensional display control substep of drawing a front side and a back side of the current page rotated and virtually transformed in said current page rotating substep in a two dimensional plane as viewed in a normal direction of said display unit as well as setting said 15 drawing data to the turning state display data.

19. The page information display method according to Claim 14, wherein said turning state display data creating step further comprises a substep of creating the turning state display data having said current page integrated with 5 a tag portion, when a tag is appended to said current page.

20. The page information display method according to Claim 14, wherein said turning state display data creating step further comprises a substep of transforming said current page ahead of transforming each of said holding 5 pages, when the number of holding pages detected in said page turning operation detecting step is greater than one.

21. A page information display device having an electronic information memory for memorizing the electronic information having plural pages of information in a unit of page of predetermined size, a touch panel for 5 displaying the electronic information stored in said electronic information memory in said unit of page, as well as inputting an operation to gain access to said page information, and a display controller for controlling the display of the page information stored in said electronic 10 information memory on the basis of an operation content input into said touch panel,

wherein said display controller comprises:

a page turning operation detecting portion for outputting a page turning operation detecting signal with 15 the number of holding pages and a page turning direction defined, when a page turning operation for turning one or more pages is performed on said touch panel;

a next display page setting portion for setting a preceding page or a succeeding page by said number of

20 holding pages before or after the current page depending
on said page turning direction to a next display page to
be displayed at the next time, when the page turning
operation is completed in said page turning operation
detecting portion and the page turning operation detecting
25 signal is output; and

a page turning process portion for displaying the next
display page set in said next display page setting portion
in place of said current page on said display unit,
wherein said page turning process portion comprises:

30 a next display page reading function of reading said
next display page from said electronic information memory,
when said next display page is set;

a turning state display data creating function of
transforming the current page data making up the current
35 page that is being displayed on said touch panel at every
unit display time as well as creating the turning state
display data into which said current page is transformed,

when said page turning operation detecting signal is output; and

40 a turning state display data overwriting function of overwriting the turning state display data created in said turning state display data creating function on the next display page read in said next display page reading function until said turning state display data is exhausted.

22. A storage medium for storing a page information display program for displaying the electronic information, employing an information access device having an electronic information memory for memorizing the 5 electronic information having plural pages of information in a unit of page of predetermined size, a touch panel for displaying the electronic information stored in said electronic information memory in said unit of page, as well as inputting an operation to gain access to said page 10 information, and a display controller for controlling the display of the page information stored in said electronic

information memory on the basis of an operation content
input into said touch panel,

wherein said page information display program
15 comprises, as the commands for operating said display
controller:

a page turning operation detecting command for
outputting a page turning operation detecting signal with
the number of holding pages and a page turning direction
20 defined, when a page turning operation for turning one or
more pages is performed on said touch panel;

a next display page setting command for setting a
preceding page or a succeeding page by said number of
holding pages before or after the current page depending
25 on said page turning direction to a next display page to
be displayed at the next time, when the page turning
operation is completed in accordance with said page turning
operation detecting command and the page turning operation
detecting signal is output; and

30 a page turning process command for displaying the next display page set in accordance with said next display page setting command in place of said current page on said display unit,

 said page turning process command further comprising:

35 a next display page reading command for reading said next display page from said electronic information memory, when said next display page is set;

 a turning state display data creating command for transforming the current page data making up the current 40 page that is being displayed on said display unit at every unit display time as well as creating the turning state display data into which said current page is transformed, when said page turning operation detecting signal is output; and

45 a turning state display data overwriting command for overwriting the turning state display data created in accordance with said turning state display data creating command on the next display page read in accordance with

said next display page reading command at every unit display
50 time until said turning state display data is exhausted.

23. A page information display method for displaying
the electronic information, employing an information
access device having a storage unit for storing the
electronic information having plural pages of information
5 in a unit of page of predetermined size, a display unit
for displaying the electronic information stored in said
storage unit in said unit of page, and an operation unit
for inputting an operation to gain access to said page
information, said operation unit being provided in the
10 substantially same area as said display unit, wherein said
display unit has an information access area for displaying
the electronic information stored in said storage unit in
said unit of page, and one and the other tag display areas
for displaying a tag indicating the content of said page,
15 said tag display areas being provided at both ends of said
information access area, comprising:

a page holding operation detecting step of outputting
a page holding operation detecting signal, when a
predetermined page holding operation is performed at a
20 current page read from said storage unit that is to be
displayed at present;

a next display page setting step of setting a page
having a page number that is equal to the current page added
or subtracted by said amount of holding operation to a next
25 display page to be displayed at the next time, when the
page holding operation detecting signal is output in said
page holding operation detecting step; and

a page turning process step of displaying the next
display page set in said next display page setting step
30 in place of said current page on said display unit,
following said page holding operation detecting step,
further comprising a before-turning holding object page
tag coloring step of coloring a tag for a holding object
page that is held by said page holding operation with a
35 different color from other tags in one tag display area

that is displaying a tag appended to the current page, when the page holding operation is initially detected in said page holding operation detecting step.

24. The page information display method according to Claim 23, further comprising, following said page turning process step, an after-turning holding object page tag coloring step of coloring a page tag for said holding object 5 page, for which said page turning process is completed, in the other tag display area where a tag appended to a current page that has become the new current page after the page turning process is not displayed, with a different color from other tags.

25. A page information display method for displaying the electronic information, employing an information access device having a storage unit for storing the electronic information having plural pages of information 5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit

for inputting an operation to gain access to said page information, said operation unit being provided in the 10 substantially same area as said display unit,

wherein said display unit has an information access area for displaying the electronic information stored in said storage unit in said unit of page, a succeeding page tag display area for displaying a tag appended to a current 15 page read from said storage unit that is to be displayed at present and the succeeding page tags appended to the pages succeeding said current page, and a preceding page tag display area for displaying the preceding page tags appended to the pages preceding said current page,

20 comprising:

a current page tag height calculating step of calculating a display height of the current page tag on the basis of the position of said current page with respect to the total number of pages for the electronic information 25 stored in said storage unit;

a succeeding page tag display format designating step
of designating a display format of said succeeding page
tags on the basis of the tag height of the current page
tag calculated in said current page tag height calculating
30 step and the total number of succeeding pages; and
a preceding page tag display format designating step
of designating a display format of said preceding page tags
on the basis of the tag height of said current page tag
and the total number of preceding pages before or after
35 said succeeding page tag display format designating step,
the method further comprising:
a page holding operation detecting step of outputting
a page holding operation detecting signal, when a
predetermined page holding operation is performed at the
40 current page;
a next display page setting step of setting a page
having a page number that is equal to the current page added
or subtracted by said amount of holding operation to a next
display page to be displayed at the next time, when the

45 page holding operation detecting signal is output in said page holding operation detecting step; and

26. a page turning process step of displaying the next display page set in said next display page setting step in place of said current page on said display unit,

50 said page turning process step further comprising a holding object page tag display substep of displaying the tags appended to the current page that is an object of said turning process and the holding object pages held in said holding operation in a display format in accordance with

55 a direction of the page turning process among those designated in said preceding page tag display format designating step or said succeeding page tag display format designating step within said information access area, following the transformation or movement of the current

60 page in said current page turning process.

26. The page information display method according to Claim 25, further comprising, following said page holding operation detecting step:

a before-turning holding object page tag coloring step
5 of coloring a tag for a holding object page that is held
by said page holding operation with a different color from
other tags in one tag display area that is displaying a
tag appended to the current page, when the page holding
operation is initially detected in said page holding
10 operation detecting step; and
an after-turning holding object page tag coloring step
for coloring a page tag for said holding object page, for
which said page turning process is completed, in the other
tag display area where a tag appended to a current page
15 that has become the new current page after the page turning
process is not displayed, with a different color from other
tags, following said page turning process step.

27. The page information display method according to
Claim 25, wherein said holding object page tag display
control step further comprises a substep of setting the
tags appended to the current page that becomes the turning
5 process object and the holding object pages held in said

holding operation in a display format of equal and close interval between tags.

28. A page information display method for displaying the electronic information, employing an information access device having a storage unit for storing the electronic information having plural pages of information

5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page information, said operation unit being provided in the

10 substantially same area as said display unit, wherein said display unit has an information access area for displaying the electronic information stored in said storage unit in said unit of page, and one and the other tag display areas for displaying a tag indicating the content of said page,

15 the tag display areas being provided at both ends of said information access area, comprising:

a page holding operation detecting step of outputting
 a page holding operation detecting signal, when a page
 holding operation is performed for the tags displayed in
20 said one or the other tag display area;

 a next display page setting step of setting a page
 having a page number that is equal to the current page added
 or subtracted by said amount of holding operation to a next
 display page to be displayed at the next time, when the
25 page holding operation detecting signal is output in said
 page holding operation detecting step; and

 a page turning process step of displaying the next
 display page set in said next display page setting step
 in place of said current page on said display unit,

30 the method further comprising:

 following said page holding operation detecting step,
 a tag holding circle display step of displaying a circle
 corresponding to the number of holding object pages in said
 page holding operation over a tag for which said page
35 holding operation is detected, when the page holding

operation is initially detected in said page holding operation detecting step.

29. A page information display method for displaying the electronic information, employing an information access device having a storage unit for storing the electronic information having plural pages of information

5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page information, said operation unit being provided in the

10 substantially same area as said display unit, comprising, an article information enlarging operation detecting step of outputting an article information enlarging operation detecting signal having the positional information as to an article information enlarging

15 operation, when the article information enlarging operation is detected on said operation unit, in the case where plural articles of information making up a current

page are defined in said current page read from said storage unit that is to be displayed at present; and

20 an article information enlarging display step of displaying in enlargement the article information at a position indicated by said positional information on said display unit, in the case where the article information enlarging operation detecting signal is output in said 25 article information enlarging operation detecting step.

30. The page information display method according to Claim 29, wherein said article information enlarging operation detecting step further comprises a substep of outputting an article information enlarging operation 5 detecting signal including a click position as said positional information, when a click is made on said operation unit.

31. The page information display method according to Claim 29, wherein said article information enlarging operation detecting step further comprises an article information continuous enlarging operation detecting

5 substep of outputting an article information continuous
enlarging operation detecting signal in the case where two
or more articles of information is contained in a locus
of dragging, when a dragging is made on said operation unit,
and said article information enlarging display step
10 comprises a continuous enlarging display substep of
displaying in enlargement said article information
individually in time series at every predetermined time
interval in the order of said dragging, in the case wherein
said article information continuous enlarging operation
15 detecting signal is output.

32. The page information display method according to
Claim 31, wherein said continuous enlarging display step
further comprises a substep of displaying in enlargement
said two or more articles of information in time series
5 continuously at a time interval in accordance with a rate
of said dragging.

33. The page information display method according to
Claim 29, further comprising, following said article

information enlarging display step: an article display page turning inhibit control step of inhibiting a normal 5 page turning operation while said article information is being displayed in enlargement.

34. A page information display method for displaying the electronic information, employing an information access device having a storage unit for storing the electronic information having plural pages of information 5 in a unit of page of predetermined size, a display unit for displaying the electronic information stored in said storage unit in said unit of page, and an operation unit for inputting an operation to gain access to said page information, said operation unit being provided in the 10 substantially same area as said display unit, comprising: an article information enlarging operation detecting step of outputting an article information enlarging operation detecting signal having the positional information as to an article information enlarging 15 operation, when the article information enlarging

operation is detected on said operation unit, in the case where plural articles of information making up a current page are defined at said current page read from said storage unit that is to be displayed at present; and

20 an article information enlarging display step of displaying in enlargement the article information at a position indicated by said positional information on said display unit, in the case where an article information enlarging operation detecting signal is output in said 25 article information enlarging operation detecting step, said article information enlarging display step further comprising an enlarging time wire frame display substep of enabling a wire frame, with a start region at an outside periphery of said article information to be 30 enlarged, to be displayed at multiple stages of varying sizes up to an outside periphery of said display unit.

35. The page information display method according to Claim 34, further comprising, following said article information enlarging display step, a reducing time wire

frame display step of enabling a wire frame, with a start
5 region at an outside periphery of said display unit, to
be displayed at multiple stages of varying sizes up to an
outside peripheral position of the article information at
said current page, when an enlargement completing
operation for completing the enlargement of said article
10 information is performed.

36. The page information display method according to
Claim 34, wherein said article information enlarging
display step further comprises an enlarged tag appending
step of enlarging a tag as well as appending said enlarged
5 tag to said enlarged article information, in the case where
said current page has the tag.

37. The page information display method according to
Claim 34, wherein said article information enlarging
display step further comprises a substep of embossing an
article chosen from said current page.

38. A page information display device having an
electronic information memory for memorizing the

electronic information having plural pages of information
in a unit of page of predetermined size, a touch panel for
5 displaying the electronic information stored in said
electronic information memory in said unit of page, as well
as inputting an operation to gain access to said page
information, and a display controller for controlling the
display of the page information stored in said electronic
10 information memory on the basis of an operation content
input into said touch panel,
said display controller comprising an event driven
display control portion for enabling the pages displayed
on said touch panel to be changed on the basis of the time
15 and locus from a pointer down to up on said touch panel,
said event driven display control portion comprising
a page selection function for each locus direction for
selecting a page having a smaller page number or a larger
page number than that of a page being displayed at present
20 on the basis of the locus of pointer from said pointer down
to up.

39. The page information display device according to
Claim 38, wherein said electronic information memory has
the article information making up each page of said
electronic information, and said event driven display
5 control portion has an article continuous display function
of continuously displaying in enlargement the article
information overlapped on a path of the locus on the basis
of said path of the locus.

40. A page information display device having an
electronic information memory for memorizing the
electronic information having plural pages of information
in a unit of page of predetermined size, a touch panel for
5 displaying the electronic information stored in said
electronic information memory in said unit of page, as well
as inputting an operation to gain access to said page
information, and a display controller for controlling the
display of the page information stored in said electronic
10 information memory on the basis of an operation content
input into said touch panel:

15 said display controller comprising a cache memory for memorizing temporarily the page information that is judged to be displayed on said touch panel among the electronic information stored in said electronic information memory,

20 a continuous page prefetch control portion for storing in advance the page information having a page number following the page number of the current page being displayed at present on said touch panel in said cache memory, and a page turning process control portion for effecting a page turning process by selecting one or more pages in accordance with an operation on said touch panel,

25 wherein said continuous page prefetch control portion has a pages turning time deleting function of deleting the page data in plural pages from said cache memory, in the case where a page turning operation of plural pages is detected by said page turning process control portion.

41. The page information display device according to
Claim 40, wherein said display controller comprises an article information prefetch control portion for storing

the article information within said current page in said
5 cache memory in the case where the article information is
contained in said current page.

42. A page information display device, comprising:
reception means for receiving the ML data described
in a mark-up language via a communication line from a
server;
5 ML data conversion means for converting the ML data
received by said reception means into the image data in
a unit of page of predetermined size;
an electronic information memory for memorizing the
page information that is the image data converted by said
10 ML data conversion means;
a touch panel for displaying the page information
stored in said electronic information memory as well as
inputting an operation to gain access to said page
information; and
15 a display controller for controlling the display of
the page information stored in said electronic information

memory on the basis of an operation content input into said touch panel,

wherein said ML data conversion means comprises a page 20 number appending portion for converting a link structure of said ML data into one dimensional book structure as well as appending sequentially the page number to the page information after conversion, and

· said display controller comprises an event driven 25 display control portion for selecting the page information of a page having a smaller page number or a larger page number than that of a page being displayed at present on said touch panel as a next page to be displayed at the next time on the basis of a locus from the pointer down to up 30 on said touch panel.

43. The page information display device according to
Claim 42, wherein said ML data conversion means comprises
a tree structure converting portion for designating a
single tree structure from the link structure of said ML
5 data as well as converting said tree into a one-dimensional

book structure by searching said tree in a predetermined search order.

44. The page information display device according to Claim 43, wherein said tree structure converting portion searches the link structure of said ML data giving priority to the depth.

45. The page information display device according to Claim 42, wherein said display controller comprises a tag appending portion for appending a tag indicating a page number of said page information to both end portions of 5 said touch panel, said tag appending portion having a converted page tag display function of displaying the tag for the page having the page number appended by said page number appending portion on said touch panel.

46. A page information display device, comprising:
reception means for receiving the page information from a server;
an electronic information memory for memorizing the 5 page information being received by said reception means;

a touch panel for displaying the page information stored in said electronic information memory as well as inputting an operation to gain access to said page information; and

10 a display controller for controlling the display of the page information stored in said electronic information memory on the basis of an operation content input into said touch panel,

wherein said display controller comprises a tag 15 appending portion for displaying a tag indicating the content of the page information stored in said electronic information memory on said touch panel; and

a streaming time dynamic tag appending control portion for operating said tag appending portion as the page 20 information is being received by said reception means.

47. A page information display device, comprising: reception means for receiving the page information having a predetermined total number of pages from a server;

an electronic information memory for memorizing the
5 page information being received by said reception means;
a touch panel for displaying the page information
stored in said electronic information memory as well as
inputting an operation to gain access to said page
information; and
10 a display controller for controlling the display of
the page information stored in said electronic information
memory on the basis of an operation content input into said
touch panel,
wherein said display controller comprises a tag
15 appending portion for displaying the tags indicating the
contents of the page information stored in said electronic
information memory on said touch panel, the number of said
tags corresponding to said total number of pages; and
a streaming time dynamic tag coloring control portion
20 for coloring a tag which has been received with a different
color from the tags which have not been received, as the
page information is being received by said reception means.

48. A page information display device comprising:

reception means for receiving the page information

from a server;

an electronic information memory for memorizing the

5 page information being received by said reception means;

a touch panel for displaying the page information

stored in said electronic information memory as well as

inputting an operation to gain access to said page

information; and

10 a display controller for controlling the display of

the page information stored in said electronic information

memory on the basis of an operation content input into said

touch panel,

wherein said display controller comprises a tag

15 appending portion for displaying a tag indicating the

content of the page information stored in said electronic

information memory on said touch panel; and

a streaming time dynamic tag length control portion

for enabling said tag appending portion to create a tag

20 having a length corresponding to the amount of information
already received in one page of the page information as
the page information is being received by said reception
means.